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<u>ABSTRACT</u>

A method of analyzing alveolar breath. Breath is expired through an analysis chamber. The concentration of a first component of the breath is monitored as the breath is expired through the analysis chamber. When the concentration of the first component indicates that alveolar breath is in the analysis chamber, at least one concentration measurement of a second component of the breath is triggered. Concentration measurements of the second component are discontinued when the concentration of the first component indicates that alveolar breath is no longer passing through the analysis chamber.